EFFECT OF BANK SIZE ON THE LEVEL OF NON-PERFORMING LOANS IN COMMERCIAL BANKS IN KENYA

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ABSTRACT

The general objective of this study was to establish the effect of bank specific factors on the level of non-performing loans in commercial banks in Kenya. Specifically, the study sought to establish the effect bank size on the level of non-performing loans in commercial banks in Kenya. The study used explanatory research design. The target population for the study used all the forty three commercial banks in operation in Kenya as at 31st December 2014. The sampling frame was the list of all licensed commercial banks in operation as at 31st December 2014 as listed in the CBK Annual supervisory report of 2014. The study used both primary and secondary data. Primary data was collected by questionnaire in 2016. Annual secondary data was collected for the period 2003-2014 from Central Bank annual supervision reports, The Banking Survey and the commercial banks published financial statements for use in the study. The research was carried out using explanatory research design. The sampling frame for the research will be all the forty three commercial banks licensed by CBK in operation as at 31st December 2014. A census was used. The data was analyzed to obtain the descriptive and inferential statistics. Multiple panel regression models was used to establish the effect of bank size on NPLs. The conditional tests that was carried out before panel data analysis is carried out was normality test, Durbin Watson test for Autocorrelation and White test for Hetroscadasticity. Correlation analysis established the extent of the relationship.

The study findings indicated that bank size affect the level of non- performing loans. This was evidenced by the responses from the respondents who indicate that the number of the bank's branches affects the level non-performing loans, a change in the size of the bank's total assets affects the level of non-performing loans and the size of the bank's total assets affects the level of non-performing loans.

It was possible to conclude that bank size is deemed to influence the size of NPLs with the big bank expected to have a lower level of NPLs due to the fact that it enjoys economies of scale and has the resources to carry out a thorough assessment. The small bank on the other hand is expected to have a higher level of NPLs.

The study recommended that there is need for commercial banks to adopt various credit risk management's practices in order to reduce their level of non-performing loans. It further recommended for sustainable and reliable credit database for immediate and quicker use when needed by both large and small size bank.

Key words: Non-Performing Loan, Bank size, Central bank of Kenya, commercial banks of kenya

1. INTRODUCTION

The current Euro zone crises stem from NPLs. There has been a huge increase in credit growth provided by financial institutions across the region in the last two decades (Makri, Tsagkanos & Bellas, 2014). It occurred due to deregulation of financial markets and development of information technology which led to enhanced financial intermediation (Panopoulou, 2005; Rinaldi & Sanchis-Arellano, 2006). As a result of that there was increased competition among banks both in the domestic and foreign markets. They ensured that there was easier access to credit to both individuals and the government. This resulted in loans being granted without due diligence and resulted in a big increase in NPLs. Greece was particularly affected by an astronomical growth in NPLs (Louzis, Vouldis & Metaxas, 2013).This led to an economic crunch and finally the collapse of the economy of Greece. Spain also was affected by the crisis but the level of NPLs didn't reach alarming levels as those in Greece. It has since recovered from it. Greece is still struggling with huge levels of NPLs and the economy has all but collapsed. It has been bailed out severally by the European Union Bank. The most recent was in February 2015. There were still ongoing talks for a further bail out in the second quarter of 2015.

NPLs have become a global problem since they are seen as a trigger for financial crises. The size of NPLs is a fundamental component of the start and advancement of financial crisis (Khemraj & Pasha, 2011). A reduced size of NPLs is a pointer to a more relatively stable financial system while a high size of NPLs indicates the existence of financial fragility (Khemraj & Pasha, 2011). Countries the world over are paying more attention to NPLs to avoid a repeat of facing the problems they did during the 2007- 2009 global financial crisis.

Kenya has experienced several banking crises in 1986-1989, 1993-1994 and 1998 (Kithinji & Waweru, 2007; Ngugi, 2001). During that period thirty seven commercial banks in total collapsed (Mwega, 2009). One of the reasons for the collapse was high NPLs with others being poor lending practices, conflict of interest between shareholders and banks' top management, slow recovery of NPLs, insider lending to directors and undercapitalization (Kamau, 2008; CBK 1997, 2000, 2003). The cost of NPLs in an economy is enormous. Borio and Lowe (2002) observed that the cost of banking crises in terms of output is a double digit figure of GDP. The Central Bank of Kenya as the regulator laid prudential guidelines to control operations of commercial banks (CBK, 2006).

The guidelines have stipulated that NPLs for a particular bank should not exceed 10% of the total loan book (CBK, 2006). NPLs had decreased from a high of 33% in 1998 to a low of 3.0 % in 2010 but started to increase in 2011 to 4.5%. In 2012 they were 4.7% and at the end of 2013 stood at 5.2% and have been on an upward trend since then. At the end of the first quarter of 2014 they had risen to 5.6 %. Although the figures have dropped from a high of over 30% in 1998 when Kenya experienced banking crisis the actual non-performing loans value is still high hence the need to control NPLs before they get out of hand. At the end of December 2013 the actual NPLs were 81.9 billion and at end of the first quarter 2014 were 95.1 billion being an increase of 16.1% in just three months (CBK, 2014).

2. STATEMENT OF THE PROBLEM

Loan performance is critical for commercial banks since it is the main source of income. It exposes them to the risk of default due to non-payment leading to NPLs. NPLs are a major problem for commercial banks since they affect their profitability and liquidity (Siraj & Pillai, 2012). Michael, Vasanthi and Selvaraju (2006) emphasized that NPLs in a loan portfolio affect operational efficiency which in turn affects profitability, liquidity and solvency positions of banks. The loan portfolio is typically the largest asset and the predominant source of revenue for lending institutions (Morsman, 1993). A bank's balance sheet is different from that of a typical company since loans represent the majority of the bank's assets (Saunders & Cornett, 2005). At the end of the first quarter of 2014 the total loans and advances for Kenyan commercial banks were Kshs.1.69 trillion which represented 57.8 % of the total assets of Kshs.2.82 trillion (CBK,2014). This being the main asset a default   on loans will have serious consequences for the banks as it has an impact on their liquidity and profitability.

Commercial banks try to mitigate the losses arising from NPLs by having provisions. Loan loss provisions act as a cushion for NPLs and the bank will be able to withstand the loss. However when the level of NPLs is huge this is not possible. The most profound impact of high NPLs in the bank's portfolio is the reduction in bank profitability especially when it comes to disposals (Waweru & Kalani, 2009). Banks need to establish how they are affected by bank specific factors to enable them take measures to safe guard their bottom line and thus ensure their survival.

 NPLs have become a cause for concern for governments since the global financial crisis of 2007-2009. NPLs have an effect on the financial stability since they are seen as a trigger for financial

crises (Caprio & Klingebiel, 2002). According to De Grawe (2008) the effect of non-performing loans can bring a bank to its collapse and even the whole of the banking industry through contagion effect. NPLs have been partially attributed to informal asymmetry (Pagano & Jappeli, 1993). It is for this reason that Central Bank of Kenya introduced Credit Information Sharing by commercial bank to reduce Information Asymmetry between them as part of the government measures to deal with NPLs in 2008. Whether this has led to a reduction of NPLs however remains unclear going by the trend of NPLs. The level of NPLs reduced from 2008 to reach an all time low of 3% in 2010 before the upsurge began in 2011. The ratio of gross NPLs to gross loans has been on an upward trend ever since 2011 when it increased to 4.5% from 3% as at the end of 2010. At the end of 2012 it stood at 4.7% while at the end of 2013 it was 5.2% and by the end of 2014 it was 5.6%. The stock of non-performing loans increased by16.1% from Kshs.81.9 billion in December 2013 to Kshs.95.1 billion as at March 2014 (CBK, 2014). This is by no means a large figure in actual terms. Going by the recent upsurge in NPLs there is a need to establish the contributory factors.

Researches on the topic namely Khemraj and Pasha (2010), Prasanad and Espinoza (2010), Dash and Kabras (2010), Warue (2013) and Shinjgerji (2014) have considered the factors that contribute to NPLs. They considered the effects of bank specific factors on NPLs in totality and not as per the various loan types as will be done in the current study. The previous studies have also not considered the effect of Credit Information Sharing on the level of NPLs. The researcher is motivated to carry out the research due to the recent upsurge in NPLs since 2011 especially after the introduction of Credit Information Sharing in 2008 to reduce information asymmetry between the banks. Information Asymmetry is a contributory factor to bank specific factors that also affect loan performance. It is in this view that this study sought to establish the effect of bank size on the level of non-performing loans in commercial banks in Kenya.

3 PURPOSE OF THE STUDY

The purpose of this paper was to establish the effect of bank size on the level of non-performing loans in commercial banks in Kenya.

4. LITERATURE REVIEW

Bank size is a variable used to measure the economic scale. In most studies on banking the banks total assets are used as a proxy. The size of the bank is a determinant of NPLs since large banks are presumed to have better credit appraisal processes resulting in fewer NPLs. Salas and Saurina (2002) found a negative relationship between bank size and NPLs and argue that bigger size allows for more diversification opportunities. Hu, Yang and Yung-Ho (2004) report similar results. Jimenez, Lopez and Saurina (2007) found that larger banks have lower NPLs ratios. It seems that portfolio diversification and possibly better managerial ability at larger banks play a role in mitigating credit risk within Spain.

The size of the bank has an effect on the loan performance of commercial banks. Khemraj and Pasha (2010) in their study used pooled least squares with fixed effects estimators in an econometric study of Guyana on bank's size effect on NPLs. They used firm specific data for six banks from 1994 to 2004.They constructed the size by computing the relative market share of the asset of each commercial bank. They found that the variable is positive but insignificant. The study found that big banks are not necessarily better at screening loan customers as compared to small banks. It is inconsistent with previous studies (Salas & Saurina, 2002; Rajan & Dhal, 2003 and Hou & Dickson, 2006). According to these studies, the inverse relationship meant that big banks are effective in screening loan customers when compared to small banks. They have better risk management strategies translating in more superior portfolios when compared to their smaller counterparts. There are other previous studies which had found a positive association.

Warue (2013) in her study used fixed effects panel data approach with banks categorized into small, medium and large. She used data from 37 of the 44 commercial banks in Kenya to establish the effects of macroeconomic and bank specific factors on NPLs. The study was for the period 1995-2009. Bank specific variables considered were bank ownership, size, return on capital employed and return on assets. Macroeconomic factors included real GDP, GDP per capita, lending interest rate, real interest rate, interest spread and inflation. It established that the size of the bank had an effect on NPLs since the small banks had higher NPLs compared to medium size banks while large banks had the lowest NPLs. This study found evidence that bank specific factors contribute to NPLs at a higher magnitude compared to macroeconomic factors. It also shows that

improving bank specific factors leads to minimize the non-performing loans while increase in macroeconomic factors leads to an increase in NPLs.

Chernykh and Theodossious (2011) studied the determinants of long-term lending by bank services to firms in emerging markets using bank level information for 881 banks in Russia with variables, bank size, capitalization, liability structure, risk taking, ownership type and managerial capital and location of individual banks. The size of the bank was measured by assets. They found that only bank size and capitalization as the only determinants of not only loans extended to business but also long term loans. Thus the bank size contributes to NPLs since large banks grant more loans leading to the possibility of higher NPLs.

Louzis, Vouldis and Metaxas (2013) whose study sought to examine the determinants of NPLs in Greece banking sector for different types of loans (consumer, business and mortgage). They used dynamic panel data estimator and OLS estimation method. The macroeconomic variables considered were GDP, unemployment and interest rate while bank specific factors were bank size and bank management. They found that market power had a significant impact only for business loans NPLs and not on mortgage or consumer loans.

Tucker's study of 2013 in the Bahamas sought to establish the effect of economic and other variables on NPLs and determine if there is a feedback response from NPLs to economic growth. He used fixed effect panel model using data from 1994-2004, He found that NPLs and the loans to asset ratio are positively related. Banks which take greater risk tend to have a greater amount of NPLs. The size of the bank may not be relevant in terms of mitigating risk as larger banks did not have significantly lower NPLs. This is contrary to the findings by other scholars. It establish that growth in economic activity leads to a reduction in NPLs in both the long and short run as per the studies by other scholars.

5. METHODOLOGY

This study adopted explanatory research design. . The target population for the study used all the forty three commercial banks in operation in Kenya as at 31st December 2014. . The study used both primary and secondary data. Primary data was collected by questionnaire in 2016. Annual secondary data was collected for the period 2003-2014 from Central Bank annual supervision

reports, The Banking Survey and the commercial banks published financial statements for use in the study. The research was carried out using explanatory research design. The sampling frame for the research will be all the forty three commercial banks licensed by CBK in operation as at 31st December 2014. A census was used. The data was analyzed to obtain the descriptive and inferential statistics. Multiple panel regression models was used to establish the effect of bank size on non-performing loans. The conditional tests that was carried out before panel data analysis is carried out was normality test, Durbin Watson test for Autocorrelation and White test for Hetroscadasticity. Data was collected, coded and analyzed using SPSS version 20.0. The findings were presented in form of tables and pie charts and discussions and interpretation of the same given.

6. RESULTS AND DISCUSSIONS

The objective of the study was to e sought to establish the effect of bank size on the level of non-performing loans in commercial banks in Kenya. Results indicate 76.3% agreed that the number of the bank's branches affects the level non-performing loans, 68.5% of the respondent agreed that the size of the bank' market share affects the level of non-performing loans, 76.3% agreed that the size of the bank's total assets affects the level of non-performing loans, 79% agreed that changes in bank's market share affects level of non-performing loans, 89.5% agreed that changes in the size of the bank's total assets affects the level of non-performing loans and finally 63.1% agreed that a change in the number of bank's branches affects the level of non-performing loans. The mean score for the responses was 4.03 which indicated that most of the respondents agreed with the statements on the effect of bank size on level of non performance loan.

The findings of the study agree with those of Chernykh and Theodossious (2011) studied the determinants of long-term lending by bank services to firms in emerging markets using bank level information for 881 banks in Russia with variables, bank size, capitalization, liability structure, risk taking, ownership type and managerial capital and location of individual banks. The size of the bank was measured by assets. They found that only bank size and capitalization as the only determinants of not only loans extended to business but also long term loans. Thus the bank size contributes to NPLs since large banks grant more loans leading to the possibility of higher NPLs.

Table 1: Effect of Bank Size on the Level of non-Performing Loans

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
The number of the bank's branches affects the level non-performing loans.	7.9%	13.2%	2.6%	36.8%	39.5%	3.87
The size of the bank' market share affects the level of non-performing loans.	5.3%	7.9%	18.4%	13.2%	55.3%	4.05
The size of the bank's total assets affects the level of non-performing loans	2.6%	10.5%	10.5%	31.6%	44.7%	4.05
A change in bank's market share affects level of non-performing loans	5.3%	13.2%	2.6%	23.7%	55.3%	4.11
A change in the size of the bank's total assets affects the level of non-performing loans.	0.0%	5.3%	5.3%	31.6%	57.9%	4.42
A change in the number of bank's branches affects the level of non-performing loans.	5.3%	21.1%	10.5%	28.9%	34.2%	3.66
Average	**4.4%**	**11.9%**	**8.3%**	**27.6%**	**47.8%**	**4.03**

7. MULTIPLE REGRESSION ANALYSIS

Regression analysis was conducted to empirically determine whether bank size is a significant determinant of bank size on the level of non-performing loans in commercial banks in Kenya. The coefficient of determination R^2 and correlation coefficient (r) shows the degree of association between the independent and dependent variable. The results of the linear regression indicate $R^2 = 0.573$ and R= 0.757 as shown in Table 2. This is an indication that there is a strong relationship between independent variable; bank size and the dependent variable non-Performing loan.

From the model summary table below adjusted R^2 was 0.561 this indicates that bank size explains 56.1% of variations in non -performing loans. Therefore further research should be conducted to investigate these other factors that affect non-performing loans in commercial banks of Kenya. The Durbin-Watson statistic is always between 0 and 4.The value of 2.346 means that there is no autocorrelation in the sample.

Table 2: Model Summary for Bank Size

Indicator	Coefficient
R	0.757
R Square	0.573
Adjusted R Square	0.561
Std. Error of the Estimate	0.29773
Durbin-Watson	2.346

The overall model significance was presented in table. An F statistic of 48.278 indicated that the overall model was significant as it was less than the critical P, value=0.05 level of significance. The findings imply that bank size was statistically significant in explaining non-performing loan.

Table 3: ANOVA for Bank Size

Indicator	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.279	1	4.279	48.278	0.000
Residual	3.191	36	0.08		
Total	7.471	37			

The bank size coefficients are presented in Table 4. The results show that bank size contributes significantly to the model since the p-value for the constant and gradient is less than 0.05. The fitted equation is as shown below

$Y= 1.364+ 0.679X_1$

This confirms the positive effect of bank size on non-performing loans. The study findings corroborate with those of Warue (2013) in her study used fixed effects panel data approach with banks categorized into small, medium and large. She used data from 37 of the 44 commercial banks in Kenya to establish the effects of macroeconomic and bank specific factors on NPLs. The study was for the period 1995-2009. Bank specific variables considered were bank ownership, size, return on capital employed and return on assets. Macroeconomic factors included real GDP, GDP per capita, lending interest rate, real interest rate, interest spread and inflation. It established that the size of the bank had an effect on NPLs since the small banks had higher NPLs compared to medium size banks while large banks had the lowest NPLs. This study found evidence that bank specific factors contribute to NPLs at a higher magnitude compared to macroeconomic factors. It also shows that improving bank specific factors leads to minimize the non-performing loans while increase in macroeconomic factors leads to an increase in NPLs.

Table 4.Coefficients of Bank Size

Variable	Beta	Std. Error	t	Sig.
Constant	1.364	0.413	3.302	0.002
Bank Size	0.679	0.098	6.948	0.000

8. CONCLUSIONS

The results demonstrated that the number of the bank's branches affects the level non-performing loans, the size of the bank' market share affects the level of non-performing loans, the size of the bank's total assets affects the level of non-performing loans, changes in bank's market share affects level of non-performing loans, changes in the size of the bank's total assets affects the level of non-performing loans and a change in the number of bank's branches affects the level of non-performing loans.

The study findings led to the conclusion that bank size statistically significant in explaining the level of non-performing loans in commercial banks in Kenya. The study concludes that bank size is deemed to influence the size of NPLs with the big bank expected to have a lower level of NPLs due to the fact that it enjoys economies of scale and has the resources to carry out a thorough assessment. The small bank on the other hand is expected to have a higher level of NPLs.

9 RECOMMENDATIONS

The study recommended that there is need for commercial banks to adopt various credit risk management's practices in order to reduce their level of non-performing loans. It further recommended for sustainable and reliable credit database for immediate and quicker use when needed by both large and small size bank.

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